

cies, nor are they so deeply rugose on their beveled end. The two opposed teeth, close-set under the middorsal tip of segment 10, are much sharper and better exposed to view; in *aspersus* they are blunt; hitherto they seem to have been overlooked. The inferior appendage is longer and much more deeply and narrowly cleft than in *aspersus*, and its tips are more widely outspread. The subgenital plate of the female is similar to that in *aspersus*, but perhaps a little longer. In the color pattern of the abdomen the two species appear almost alike.

Holotype ♂. "N. C." [Academy of Natural Sciences of Philadelphia No. 9282].

Allotype ♀. Inglenook, Pennsylvania, June 3d 1892 [Academy of Natural Sciences of Philadelphia, No. 9282].

Two New South American Aeshnidae (Odonata)

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Examples of the genus *Neuraeschna* Selys are infrequent in collections. During examination of some unidentified material in the McLachlan collection, five specimens of this genus were found. Four of these appear to belong to an undescribed species, which I have great pleasure in naming after Dr. Philip P. Calvert, in honour of his eightieth birthday. I am also including a description of a second new species, based on a single male collected in British Guiana by Mr. C. A. Hudson.

Neuraeschna calverti sp. n.

♂. Labrum, anteclypeus and postclypeus yellowish, shading to yellowish-brown on frons in front; frons above dark brown anteriorly, pale yellowish-brown behind, so that the T-spot has no stem. Vertex and occiput dark brown.

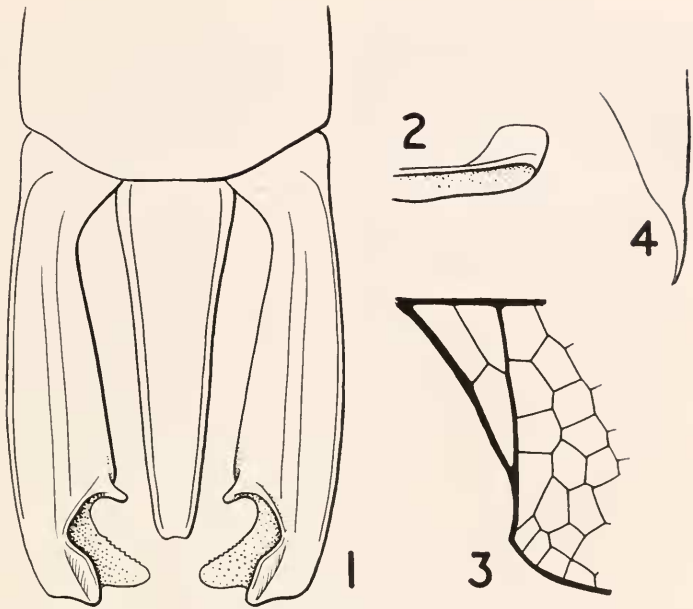
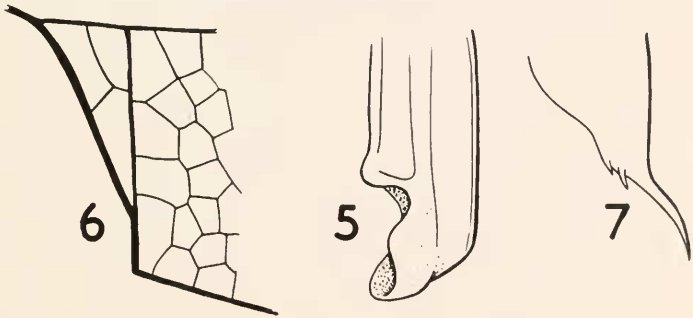
Thorax dark brown, with a blue or green dorsal spot on each side narrowed at its upper end and not reaching the antealar carina. Other thoracic markings pale yellowish-green (rather faded) as follows: The antealar sinus except near the carina;

the meso- and meta-postnota, metanotum and spots on and between the bases of the wings; two lateral stripes, narrower than the dorsal spot, one on each mes- and metepimeron, the posterior one tapering to its lower end. Femora and tibiae reddish-brown, blackish at knees, tarsi also blackish.

Abdomen brownish, tergite 1 pale, probably blue, auricles and an apical dorsal spot on 2 pale, remainder of abdomen rather discoloured. Abdomen slightly constricted at third segment and thence very gradually dilating to the eighth segment. Anal appendages reddish-brown. Superior appendages from above with outer margin slightly convex, apex somewhat truncate. Inner margin concave near base and then straight and slightly divergent for about three-quarters of its length; it then turns inward and at the bend carries a small peg-like projection. From this projection the lower inner margin runs in a concave, finely-serrate sweep to the lower apical angle, which is triangularly produced and rounded. There is a rounded median keel on the upper surface, and near the apex there is an elevated, rhomboidal, plate-like ridge, curving over inwards and forming the upper, inner, apical angle of the appendage. Inferior appendage almost as long as superior, narrow, tapered from base to apex, hollowed and trough-like, with a truncate apex, curving upward between the superior appendages.

Wings hyaline, faintly obscured with brownish, particularly along the posterior margins and costal areas. Pterostigma brown, bordered with black veins. Costa dark brown, other veins black. Membranule dirty white, short. Anal angle of hind wing obtuse, the posterior margin somewhat curved for a short distance.

♀. The three females before me are slightly larger than the ♂ and much discoloured. There are traces of a dorsal green thoracic spot but the lateral stripes (if present) are lost in the discolouration. Anal appendages broken in two examples, segments 5-10 missing in the third. Fork of tenth sternite from side slightly curved, not forming an angle with posterior margin of sternite. Wings of two as in ♂, the third with a trace of brownish suffusion along the costal margin of anterior wing, wings otherwise hyaline.

***Neuraeschna calverti******N. producta***

Neuraeschna calverti sp. n. Figs. 1-3 ♂, 4 ♀. 1, anal appendages, dorsal; 2, apex of superior appendage, profile; 3, anal angle of hind wing; 4, fork of 10th sternite, profile.

Neuraeschna producta Kim. Figs. 5-6 ♂, 7 ♀. 5, apex of superior appendage, dorsal; 6, anal angle of hind wing; 7, fork of 10th sternite, profile.

	♂ F.W.	♂ H.W.	♀ F.W.	♀ H.W.
Antenodals	32-35	23	33-41	25-27
Postnodals	22-24	27	24-30	27-33
Cross-veins in 2nd series basal to 1st thickened antennodal	2-3	2-3	3-4	3-4
Sc produced beyond nodus	2-3 cells	3 cells	2-3 cells	3 cells
Cells in triangle	9	9	9-10	8-10
Cross-veins in supra- triangular space	10-11	9	10-12	8-10
Cross-veins in median space	6	5	6-7	4-5
Length in mm.	56	55	59	59

Length (excluding appendages): ♂ 78 mm., ♀ 81 mm.

Length of ♂ superior appendages: 5 mm.

E. PERU, ex McLachlan Collection, now in B.M. (N.H.), ♂ *holotype*, ♀ *allotype*, 2 ♀ *paratypes*.

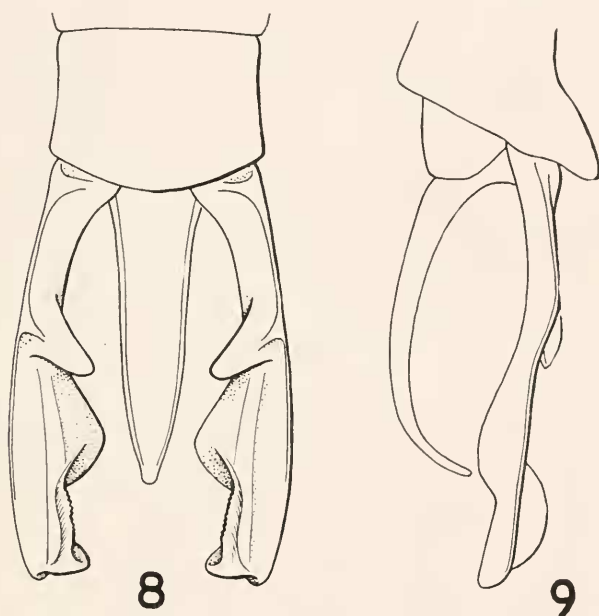
This species is related to *N. producta* Kim., also from Eastern Peru but differs in the form of the ♂ anal appendages, particularly in the small peg-like projection on the inner margin of the superior appendages and in the apical dorsal ridge. In the ♂ the anal angle of the hindwing is obtuse (right-angled in *producta*), and the posterior margin convex for a short distance (straight in *producta*). In the ♀ the fork of the tenth sternite in side view is slightly curved but continuing the line of the posterior margin of the sternite (angled caudad in *producta*).

Neuraeschna inarmata sp. n.

♂. Labrum, anteclypeus and postclypeus light reddish-brown, frons shining piceous in front; above shining piceous in front, reddish-brown near vertex and on sides, no marked T-spot.

Thorax very dark brown, paler ventrally, marked with dirty fulvous (? green in life) as follows: a large dorsal stripe on each side, not reaching the antealar carina, upper end somewhat widened on its inner side; two nearly straight, parallel-sided lateral stripes on the epimera, each about as wide as the dorsal stripe; a roughly semi-circular spot on the mesepisternum, its straight side against the lateroalar carina; spots between and on the wing-bases. Legs reddish-brown, anterior femur paler on outer surface.

Abdomen slender, constricted at the third segment, then gradually dilating to the eighth. Abdominal pattern discoloured and obscure. Segment 1 brownish, 2 with a narrow, pointed, anterodorsal spot, mid-dorsal spots small, posterodorsal divided on median line, auricular and posterolateral spots small. Segments 3-9 piceous, no visible markings, segment 10 reddish-brown. Superior appendages dark reddish-fuscous, apical half with an orange-brown dorsal carina. In dorsal view, the outer



Neuraeschna inarmata

Neuraeschna inarmata sp. n. Figs. 8-9 ♂. 8, anal appendages, dorsal; 9, anal appendages, profile.

edge of the appendage is very slightly convex from base to apex; the inner edge is more definitely concave, curving from the widened base to the rounded subapical dilatation at about two-thirds of the length of the appendage, and then roundly excised to the apex. Shortly before midway, the upper surface is produced in a large tooth with rounded apex, directed inwardly and posteriorly. In the apical third the upper surface is elevated

in a longitudinal, plate-like ridge, concave on its inner surface, its crest turned inward and serrate. Apex of the appendage with outer angle small, rounded, inner bluntly triangular. From side, the appendage is slender and sinuous, the sub-basal tooth visible above. The sub-apical dilation appears as a rounded lobe beneath the appendage and the apical ridge as a semi-circular plate above. Inferior appendage slender, tapering, and trough-like above, curved in profile, the curve being more pronounced apically.

Wings somewhat irregularly suffused with rich brown, darker between C and R. Venation piceous or dark brown; stigma brown, membranule pale brownish, extending along anal triangle to about mid-length of basal cell.

	♂ F.W.	♂ H.W.
Antenodals	26	18-20
Postnodals	17-18	21-22
Cross-veins in 2nd series before 1st thickened antenodal	1	1
Sc produced beyond nodus	1 cell	2 cells
Cells in triangle	7-8	8-9
Cross-veins in median space	6	4
Length in mm.	45	44

Length of body (excluding appendages): 63 mm.

Length of superior appendages: 4.5 mm.

BRITISH GUIANA: New River, 750 ft., 20.i-23.iii.1938, C. A. Hudson, 1 ♂. *Holotype* in B.M.N.H.

This species is closely related to *N. dentigera* Martin from Surinam, but (unless his figure is very inaccurate) it should be readily separable by the form of the ♂ superior appendages. The second tooth-like projection on the inner margin in *dentigera* is here replaced by a broad rounded lobe; The apical dorsal ridge is larger than in *dentigera* and there is no acute tooth on the outer apical angle. The inferior appendage is less curved in profile. The presence or absence of the small acute tooth on the outer apical angle of the superior appendage may not be a specific character. There is in the B.M.N.H. an example which agrees in other respects with Martin's figure of *N. harpya*, but which has a small tooth on the outer angle. The figure shows this angle as rounded in dorsal aspect but slightly pointed in profile.